

What is claimed is:

1. A method for determining a production parameter of an injection molding, in an event of implementation of injection molding using a mold having a plurality of resin inflow conduits to cavity,

wherein said production parameter determines time-sequentially an inflow of resin material from resin inflow conduits into said cavity by combination of a numerical analysis method for calculating injection molding process and a computer-aided optimization method.

2. The method for determining a production parameter of an injection molding according to Claim 1, wherein said production parameter is determined, in order to control mold clamping force required for injection molding.

3. The method for determining a production parameter of an injection molding according to Claim 1, wherein said production parameter is a parameter to control the action of inflow regulation valves positioned in a plurality of resin inflow conduits.

4. The method for determining a production parameter of an injection molding according to Claim 1, wherein said resin material for molding is thermoplastic resin.

5. A method for determining a production parameter of an injection molding according to Claim 1, wherein said resin material for molding is polypropylene-base resin.

6. The method for determining a production parameter

of an injection molding according to Claim 1, wherein said resin material for molding is low flow resin.

7. The method for determining a production parameter of an injection molding according to Claim 1, wherein said resin inflow conduit is a hot runner having an heat-retaining means.

8. The method for determining a production parameter of an injection molding according to Claim 3, wherein said flow rate regulation valve is a valve gate.

9. The method for determining a production parameter of an injection molding according to Claim 8, wherein a control method for operations of said valve gate is either of full opening or full closing.

10. The method for determining a production parameter of an injection molding according to Claim 8, wherein said production parameter is optimized under a condition that at least one of said valve gates is opened at any spot of time during a filling stage.

11. The method for determining a production parameter of an injection molding according to Claim 10, wherein said valve gate is located at each of a plurality of resin inflow conduits, one valve gate is selected as a timing regulation gate, while actions of other gates are arbitrarily determined, and the action of said timing regulation gate is constrained so that at least one valve gate is opened at any spot of time.

12. The method for determining a production parameter

of an injection molding according to Claim 1, wherein said production parameter includes a parameter to determine operation of a means to regulate the total resin flow rate to said mold.

5 13. The method for determining a production parameter of an injection molding according to Claim 1, wherein said production parameter is determined in order to control weld line occurrence.

10 14. The method for determining a production parameter of an injection molding according to Claim 13, wherein said control of weld line occurrence is a control of positions of occurrence.

15 15. The method for determining a production parameter of an injection molding according to Claim 13, wherein a state of weld line occurrence in a specified area of said molding is evaluated when determining said production parameter.

20 16. The method for determining a production parameter of an injection molding according to Claim 13, wherein target areas for controlling weld line occurrence is divided into a plurality of areas, quantity of weld line occurrence in each area is weighted, and thus weighted quantity of weld line occurrence is summed to obtain a weld line evaluation value, and the weld line evaluation value thus obtained is used to
25 induce said weld line occurrence to a specified area or to avoid said weld line occurrence from a specified area.

17. The method for determining a production parameter of an injection molding according to Claim 13, wherein determination of said production parameter is conducted by adopting auxiliary objects adding to said control of weld
5 line occurrence.

18. A method for producing an injection molding, comprising the steps of: in an event of conducting injection molding using a mold having a plurality of resin inflow conduits to a cavity, obtaining a production parameter which
10 determines time-sequentially an inflow of resin material from said resin inflow conduits into said cavity by combination of a numerical analysis method for calculating injection molding process and a computer-aided optimization method; and conducting injection molding on the basis of the thus
15 determined production parameter while controlling time-sequentially said inflow of resin material from said resin inflow conduit.

19. An injection molding device comprising: a molding device main body which feeds resin material to a mold having
20 a plurality of resin inflow conduits to a cavity through the resin inflow conduits ; a memory section which memorizes production parameters determined by combination of a numerical analysis method for calculating injection molding process and a computer-aided optimization method; and a
25 control section which carries out injection molding while controlling said molding device main body on the basis of

production parameters the thus determined and controlling time-sequentially said inflow of said resin material from said resin inflow conduits.

20. A program for making a computer execute, in the
5 course of carrying out injection molding using a mold having a plurality of resin inflow conduits to a cavity, a process for determining production parameters which determines time-sequentially the inflow of said resin material from said resin inflow conduits into said cavity by combination of a
10 numerical analysis method for calculating injection molding process and a computer-aided optimization method.